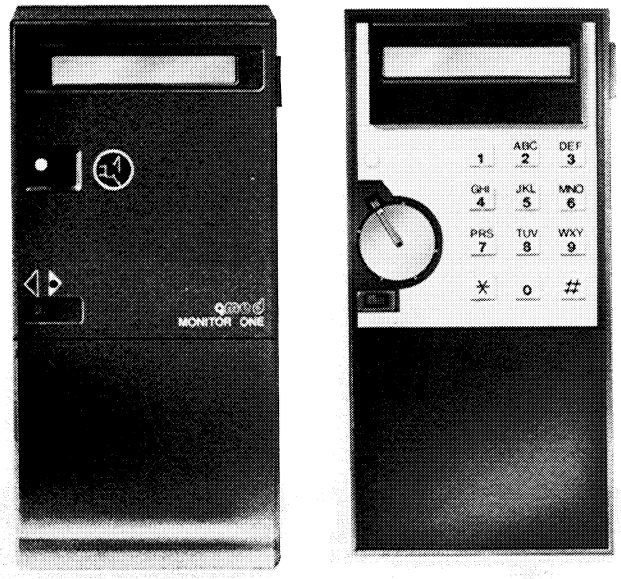
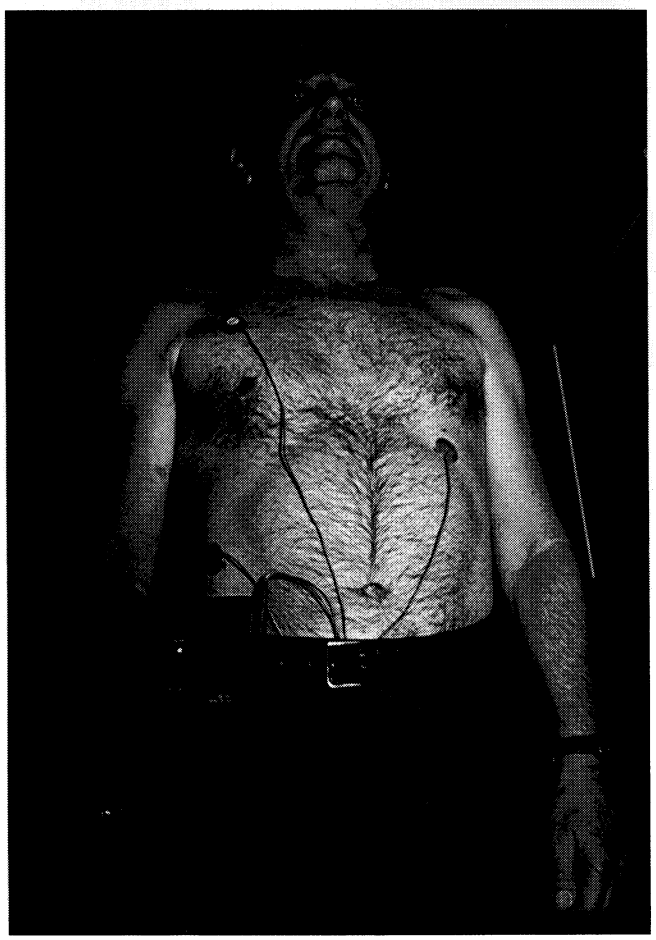
Heart Monitor





The device pictured is MONITOR ONE, a portable, computerized cardiac system that offers physicians a new approach for monitoring ambulatory patients with coronary artery disease. The cardiac monitor, alerts the patient to impending high-risk cardiac events by continuously evaluating the electrocardiographic signals generated by the heart. MONITOR ONE, which incorporates NASA technology, is the product of three years of research and development by Q-Med Inc., Clark, New Jersey.

The upper photo shows MONITOR ONE with its cover in place and with the cover removed. The latter picture shows the telephone-like keyboard for programming the microprocessor-controlled system and the circular lithium battery for the memory storage section. The main battery pack, consisting of four small nickel cadmium rechargeable batteries, is below the keyboard. The cardiac display window is at the top of the unit and adjacent to it is a connector for the three long-life high silver content electrodes (lower photo). Approximately six inches long and three inches wide, MONITOR ONE weighs 14 ounces; it may be attached to a patient's garment or carried in a pocket, and it does not interfere with daily routine.

MONITOR ONE may be worn for days, weeks, months or years. It evaluates every heartbeat and makes immediate decisions as to the normalcy or abnormalcy of the beats. Each abnormal event defined by the computer is stored for later review by the physician, who may program various thresholds for different patients. MONITOR ONE not only enables a physician to track a patient's progress over a long period, but also allows him to evaluate the efficacy of drug treatment and to adjust dosages accordingly.

MONITOR ONE was developed by three co-founders of Q-Med Inc.: Michael W. Cox, president; Dr. Richard I. Levin, vice president/medical director; and Robert A. Burns, director. They recognized early in the R&D program that the key to successful development of an ambulatory mode system was the electrode—it had to last for long periods, provide high fidelity and not require constant skin abrasion in order to function properly. NASA's Johnson Space Center (JSC) had successfully developed advanced electrodes for monitoring the heart action of Space Shuttle astronauts. The Q-Med team learned of the JSC technology and tested samples of the NASA electrodes; they proved to be ideal for MONITOR ONE. Q-Med was granted an exclusive license to manufacture and market the electrodes and in August 1984 the company was advised by the Food and Drug Administration that it could begin marketing the MONITOR ONE system. Initial deliveries of MONITOR ONE, manufactured for Q-Med by Rodale Electronics, Garden City, New York, were made last January.